Also the applicants' claimed method permits the determination of the type of defect. The difference between a bubble and an inclusion can be detected (applicants' specification, page 6, lines 12 to 17; page 8, lines 9 to 18; and page 9, lines 6 to 18). These features have been included in method claim 1 by the amendment, which includes these features in claim 1 from canceled claim 3.

Steps b) and c) of applicants' method claim 1 are repeated here for convenience:

> "b) coupling light of a second radiation source into the transparent material so that an optical path of said light **in said partial volume extends exclusively in an interior of the transparent material**;
> c) detecting scattered light from said fault in said partial volume, bright field absorption from said fault in said partial volume and/or deflection of light of said first radiation source by said fault in said partial volume in order to detect the presence of said fault in said partial volume of the transparent material;

The features of steps b) and c) are **neither disclosed nor suggested** by the disclosure in Weiss, et al, especially not in column 2, lines 29 to 46 or column 11, lines 31 to 34. Column 2, lines 29 to 46, only summarize the basic method of detecting faults in glass of Weiss, et al, as shown in fig. 2 in which one light source provides bright field illumination and another provides dark field illumination of a region through which glass sheets are conveyed. Detectors are positioned on the side of the glass sheets opposite to the two light sources. As a result the light from both light sources passes through the surfaces of the glass sheets so that defects on the surface cause changes in the light intensity signals as well as the more important defects located in the interior of the glass sheets. In fact, Weiss, et al, state that surface defects may be detected by at least one

embodiment of their method (column 7, lines 33 to 36). In contrast, applicants' only detect e.g. scattered light from a partial volume in the transparent material in which the optical path of the light is entirely within the transparent material.

Weiss, et al, thus contain **teaching of doing the opposite** from the claimed invention because they teach that light from both sources must pass through the surfaces of the glass sheet so that the light signals contain information regarding the surface defects and faults as well as the more important faults in the interior of the glass sheet. Applicants clearly teach against detecting the scattering of light from the second light source by surface defects. See for example page 5, line 6, and following of the applicants' specification.

A prior art reference that contains teaching of doing the opposite from the claimed invention cannot be used alone or combined with another prior art reference under 35 U.S.C. 103 (a) to reject the claimed invention. See M.P.E.P. 2145. X. Also the Federal Circuit Court of Appeals has said:

> "A reference should be considered as a whole, and portions arguing against or teaching away from the claimed invention must be considered." ***Bausch & Lomb, Inc. v. Barnes-Hind/Hydrocurve, Inc.***, 230 U.S.P.Q. 416 (Fed. Cir. 1986)

Weiss, et al, teach away from the claimed invention because both of the two light sources 8D, 8B (Fig. 1); 21,20 pass bright field illumination and dark filed illumination (sheets of light column 6, lines 15 to 46; fig. 3) through the plane surfaces of the glass sheets that are tested. Thus in the case of the methods of Weiss, et al, surface defects, such as dirt, which are uninteresting as far as glass

quality goes will be detected as well as defects in the interior of the glass sheet. In some cases this will produce a strong scattered light background or light will be blocked so that interior faults will not be adequately detected. In contrast the optical path of light from the second light source passing through the detected partial volume must be entirely within the glass sheet in the case of the method claimed in applicants' claim 1.

Henley, et al, do disclose illuminating the glass sheet with two radiation sources, each of which consists of only one part that produces light. One light source 117 obliquely illuminates the glass sheet from above, while another light source 114 illuminates the glass sheet from the side via an optical coupling 115 (Figs. 1, 3, 4). The light source 114 can be an incandescent bulb or a xenon lamp (column 4, lines 55 to 62).

Although figure 4 shows that light rays as parallel arrows, all the light rays would not be parallel as shown in fig. 4 unless a laser is used. But the reference does not mention a laser or state that the light rays entering the edge must be parallel. For that reason Henley, et al, do not disclose or suggest the feature that is lacking in Weiss, et al, namely that one of the radiation sources couples light into the transparent material "so that an optical path of said light **in said partial volume extends exclusively in an interior of the transparent material**".

Note the term "exclusively" – the optical of the light passing through the partial volume from the second source must be **entirely within** the transparent material. This sort of behavior is possible for example when a laser is used for the second light source, but some light passing into the edge of the glass sheet

from a non-coherent light source as in Henley, et al, would pass out of the plane surfaces of the glass sheet and be scattered by surface faults.

Thus Henley, et al, do not disclose or suggest the feature that the optical path of light from the second light source passing through the detected partial volume must be entirely within the glass sheet in the case of the method claimed in steps b) and c) of applicants' claim 1.

Many U. S. judicial opinions support the principle that there must be some hint or suggestion in the prior art of the modifications of the disclosures in a prior art reference or references, which are necessary to arrive at the claimed invention, for a valid obviousness rejection under 35 U.S.C. 103 (a) based on the prior art reference or references. For example, the Court of Appeals for the Federal Circuit has said:

> "Rather, to establish obviousness based on a combination of elements disclosed in the prior art, there must be some motivation, suggestion or teaching of the desirability of making the specific combination that was made by the applicant...Even when obviousness is based on as single reference there must be a showing of a suggestion of motivation to modify the teachings of that reference.." ***In re Kotzab***, 55 U.S.P.Q. 2nd 1313 (Fed. Cir. 2000). See also M.P.E.P. 2141

In the present case Henley, et al, do not suggest that the optical path of light from the second light source passing through the detected partial volume must be **entirely within** the glass sheet in the case of the method claimed in applicants' method claim 1. Alternatively Henley, et al, do not suggest that optical path of light from the second light source (the edge source 114,115) through the

detected volume should be entirely within the glass sheet, that it should not pass through a surface of the glass sheet, so that detection of surface faults on the glass sheet is avoided.

Furthermore the new added step d) of applicants' method claim 1 is neither disclose nor suggested in Weiss, et al, or Henley, et al. Page 3, lines 12 to 15, (second full paragraph) of the Office Action states that Weiss column 2, lines 29 to 46 and column 11, lines 31 to 34, disclose the features of step d) for ascertaining the type of fault detected e.g. in step c) of applicants' method claim 1. However the disclosure in column 2 does not mention anything but their general method of analyzing and detecting the bright field illumination and dark field illumination from the two light sources for faults in the glass sheet.

It is well established that a generic disclosure does not disclose or suggest a specific method with details that are not disclosed in the description of the generic disclosure. See M.P.E.P. 2144.08. There is no disclosure and not the slightest hint regarding what can be learned from a ratio of a bright field signal to a scattered light signal or from a ratio of a deflection signal to a scattered light signal at the cited portions of Weiss, et al. Furthermore measurement of the two ratios is not a predictable consequence of the disclosures in column 2, lines 29 to 46 and column 11, lines 31 to 34, which in fact appear to be not directly related to the subject matter of step c) of the amended claim 1.

If there is any more specific disclosures related to step d) of amended method claim 1 in either Weiss, et al, or Henley, et al, there citation is respectfully requested.